

Remarks/Arguments:

Claims 1-11, 13 and 16-20 are pending and stand rejected.

By this Amendment, claims 1, 8 and 16 are amended new claims 21-23 are added.

No new matter is presented by the claim amendments and new claims. Support for the claim amendments can be found throughout the original specification and, for example, in the original specification at page 10, lines 21-26 and page 11, line 26 to page 13, line 7.

Rejection of Claims 1, 8-9 and 13-15 under 35 U.S.C. §102(b)

In the Office Action, at item 2, claims 1, 8-9 and 13-15 are rejected under 35 U.S.C. §102(b) as being anticipated by Kato (U.S. Patent Publication No. 2002/0051971).

It is noted for the Examiner that claims 14 and 15 were canceled in the previous Amendment filed January 9, 2008 and are not address herein.

Reconsideration is respectfully requested.

Claim 1

Claim 1 is directed to a method of task management using memory ranges of shared memory, and recites:

... executing multiple instances of a kernel ...

... assigning protection attributes indicating a portion of one of the memory ranges of the shared memory for each respective atomic sub-task of the one or more atomic sub-tasks such that each respective sub-task is executed by one of a plurality of processors which inherits access rights to the shared memory indicated by the protection attributes corresponding to the respective atomic sub-task ...

... each of the protection attributes corresponding to a common instance of the multiple instances of the kernel is assigned such that the inherited access rights of the one or more processors which relate to respective sub-tasks derived from a respectively different common instance corresponds to a respectively different one of the memory ranges of the shared memory.

That is, respective sub-tasks are executed by processors which inherits their access rights to the shared memory indicated by the protection attributes. Moreover, inherited access rights which relate to respective sub-tasks derived from a respectively different common instance corresponds to a respectively different one of the memory ranges of the shared memory.

Kato Reference

Kato discloses that a processing task is broken down into a plurality of self-contained objects. Each of the task objects is defined with a computational task and at least one data-waiting slot for reception of data requested from another task object to which the processing task passes a message for the requested task. In Kato, Parallel Object Task (POT) Engines are used to handle the parallel processing of tasks. (See Kato at paragraph [0046].) Kato further discloses that it is difficult to determine the size of the POT Objects which exist within the POT Engine until run time. Because of its architecture, the POT Engines allocates a large number of POT Objects internally which changes dynamically. This requires a dynamic allocation of memory and, in actuality use, the system will have to handle a large number of POT Objects of differing sizes. Therefore, having a fast, efficient memory management is an extremely important issue. Kato, however, does not contemplate when multiple instance of a kernel are being executed. Moreover, Kato is silent regarding protection attributes and, in particular, does not disclose or suggest the feature of "each of the protection attributes corresponding to a common instance of the multiple instances of the kernel is assigned such that the inherited access rights of the one or more processors which relate to respective sub-tasks derived from a respectively different common instance corresponds to a respectively different one of the memory ranges of the shared memory," as required by claim 1. This is because, as acknowledged by the Examiner at page 3 of the Office Action, Kato includes a master task grouping that maintains internal space addresses. That is, by including a Master Task Grouping in Kato separate allocation of memory for each POT is not need because space addresses are maintained by the Master Task Grouping to be unique across all POTs.

Accordingly, it is submitted that claim 1 patentably distinguishes over Kato for at least the above-mentioned reasons.

Claim 8

Claim 8, which includes similar but not identical features to those of claim 1, is submitted to patentably distinguish over Kato for at least similar reasons to those of claim 1.

Claims 9 and 13

Claims 9 and 13, which includes all of the limitations of claim 8, are submitted to patentably distinguish over Kato for at least the same reasons as claim 8.

Rejections of Claims 2-7, 10-12 and 16-20 under 35 U.S.C. §103(a)

In the Office Action, at item 8, claims 2-7, 10-12 and 16-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kato in view of Koning (U.S. Patent Publication No. 2002/0133530). It is noted for the Examiner that claim 12 was canceled in the previous Amendment filed January 9, 2008 and is not addressed herein.

Reconsideration is respectfully requested.

Claim 16

Claim 16, which includes similar but not identical features to those of claim 1, is submitted to patentably distinguish over Kato for similar reasons to those of claim 1.

Claims 2-7, 10-11 and 17-20

Claims 2-7, 10-11 and 17-20, which include all of the limitations of claim 1, claim 8 or claim 16, are submitted to patentably distinguish over Kato for at least the same reasons as their respective independent claims.

The addition of Koning does not overcome the deficiencies of Kato. This is because, Koning does not disclose or suggest, for example:

... executing multiple instances of a kernel ...

... each of the protection attributes corresponding to a common instance of the multiple instances of the kernel is assigned such that the inherited access rights of the one or more processors which relate to respective sub-tasks derived from a respectively different common instance corresponds to a respectively different one of the memory ranges of the shared memory.

as required by claim 1 and similarly by claims 8 and 16.

Koning, which is used by the Examiner to teach scheduling of one or more atomic sub-tasks into a central task queue, discloses a control mechanism 614 that may be used to control access to resources that requires mutually exclusive access by task (e.g., portions of the memory space 601, and resources in the secondary storage system 602.) The control

mechanism 614 may include functions to create, manage and track mutual exclusion semaphores. The control mechanism may also include functions allowing tasks to take and release mutual exclusion semaphores. (See Koning at paragraph [0074].) Koning further discloses that the memory space may be divided into a system memory space 702 generally accessible by the operating system and a user memory space 704 that may be accessed by user tasks. The system memory space may include memory space for the operating system executable code 706 and may also include space for operating system queues, including a ready queue 708 and event or time-out queue 712. Koning, however, is silent regarding, for example, the execution of multiple instances of a kernel and furthermore that "each of the protection attributes corresponding to a common instance ... is assigned such that the inherited access rights of the one or more processors which relate to respective sub-tasks derived from a respectively different common instance corresponds to a respectively different one of the memory ranges of the shared memory," (emphasis added) as required by claim 1 and similarly by claims 8 and 16.

Accordingly, it is submitted that claims 2-7, 10-11 and 16-20 patentably distinguish over Kato in view of Koning for at least the above-mentioned reasons.

New Claims 21-23

New claims 21-23, which include all of the limitations of claim 1, are submitted to be patentable for at least the same reason as claim 1. New claims 21-23 are also submitted to include patentable distinctions beyond those of claim 1, for example, claim 23 includes a summing junction not disclosed or suggested in the cited art.

Consideration and allowance is respectfully requested.

Conclusion

In view of the claim amendments, new claims and remarks, Applicants submit the application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

Lawrence E. Ashery, Reg. No. 34,515
Eric Berkowitz, Reg. No. 44,030
Attorneys for Applicants

LEA/EB/snp

Dated: May 14, 2008

P.O. Box 980
Valley Forge, PA 19482
(610) 407-0700

The Director is hereby authorized to charge or credit Deposit Account No. 18-0350 for any additional fees, or any underpayment or credit for overpayment in connection herewith.

I hereby certify that this correspondence is being electronically transmitted to: Commissioner for Patents on: May 14, 2008



April Smith

278196